TSENP-A

TESTER, BIT ERROR

1. GENERAL. This procurement requires a data communications test set capable of detecting and counting bit errors in data transmissions.

2. CLASSIFICATION. Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

3. OPERATIONAL REQUIREMENTS. The equipment shall be capable of transmitting and receiving serial data and detecting serial data errors within the minimum parameters and accuracies specified below. The equipment shall be capable of simplex and duplex operations.

3.1 Data patterns. The equipment shall be capable of transmitting data in pseudorandom and repeating word patterns.

3.1.1 Pseudorandom pattern length. 511 bits to 1.047 megabits.

3.1.2 Repeating word length. 5 to 20 bits. Repeating 4-bit words shall also be provided.

3.2 Bit rates.

3.2.1 Internal bit rates. User-selectable from 1.2 kbps to 12.928 kbps.

3.2.2 External bit rates. 50 bps to 15 Mbps.

3.3 Clock stability. 100 ppm or better.

3.4 Test modes. Errors per block or errors per second.

3.5 Block size. Selectable in decades from 1 bit per block to 99,999 bits per block.

3.6 Test period. Selectable from nominal values of 1 to 1,000 seconds or greater. Continuous testing shall also be provided.

3.7 Bit-error rate measurement periods. Selectable from $1 \times 10E3$ bits to $1 \times 10E10$ bits.

3.8 Error threshold. Selectable from 0 errors to 9 errors per block or per second.

3.9 Loss of sync indicator. A loss-of-sync indication shall occur when the received data pattern is displaced in time with the reference data pattern.

3.10 Displays.

3.10.1 Blocks and seconds. Accumulated blocks from 1 block to at least 999,999 blocks shall be displayed. Elapsed time length shall be displayed from 1s to 999,999s.

3.10.2 Block errors and second errors. Block errors and second errors shall be displayed from 1 to 999,999 errors.

3.10.3 Bit errors. Bit errors shall be displayed from 1 to 999,999 errors.

3.10.4 Bit error rate. Bit error rate shall be displayed as two digits plus an exponent from 1 x 10E-5 to 1 x 10E0.

3.11 Signal monitoring. The equipment shall be provided with the capabilities to monitor the following interface signals.

       a. Send data.

       b. Serial clock transmit.

       c. Serial clock transmit external.

       d. Received data.

       e. Serial clock receive.

3.12 Interfaces. The equipment shall be provided with EIA Std RS-422 and Bell T1 interfaces.

3.13 Coding. Alternate mark inversion coding shall be provided.

4. GENERAL REQUIREMENTS.

4.1 Power source. MIL-T-28800 nominal power source requirements are invoked. Operation at 400 Hz is not required. Maximum power consumption: 150W.

4.2 Weight. 20 kg (44 lb) maximum.

4.3 Lithium batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.